

An update on our people and services related to bat ecology

Spring 2018

# PEKAPEKA-TOU-ROA LONG-TAILED BATS RECLASSIFIED AS NATIONALLY CRITICAL

The updated threat classification for New Zealand bats was released earlier in 2018, with Wildland's bat specialist Kerry Borkin being a co-author. Pekapeka-tou-roa have been reclassified from Nationally Vulnerable to Nationally Critical, the highest possible threat status. Key threats include predation by introduced mammals and habitat clearance and modification.

Photograph: David Pattemore, Plant & Food

**BREAKING NEWS!** Congratulations to Kerry Borkin, who has just been granted the Queen Elizabeth II Study Award! Kerry will travel to Australia to undertake specialist training in bat rescue, rehabilitation, and release, and visit an innovative restoration scheme in Canberra that provides habitat structure for flying species; visit Melbourne and learn from the longest running bat box monitoring scheme in the world; assist and learn from road ecology projects in Brisbane; and learn how conflicts between bats and people are managed in three states: NSW, VIC, QLD.



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# BATS IN NZ PLANTATIONS - FOREST MANAGEMENT GUIDANCE

Long-tailed bats are known to use plantation forests throughout their range, and lesser short-tailed bats have been recorded using plantations in the central North Island.

Kerry led the recent publication of guidance documents for plantation forests with bats present, which were developed in collaboration with the NZ Forestry Owners' Association. This guidance aims to enable forest owners, forestry companies, managers, and operators to manage plantation forests in using approaches and techniques that enable them to continue to support bats in perpetuity.

This document summarises what we currently know about bats in plantations, provides advice for "bat-friendly" forest management, advice on planting outside plantation stands, and presents an advocacy and communication strategy poster (see below) and available online at:

http://rarespecies.nzfoa.org.nz/site/assets/ files/1088/bats in plantations management\_ guidance for nzfoa\_revised\_23\_may\_2018. pdf



# HAMILTON LONG-TAILED BAT ECOLOGY AND MANAGEMENT

The Wildlands bat team was kept busy over the 2018 summer, investigating long-tailed bat (pekapeka-tou-roa) behaviour and activity in the southern Hamilton area.

The team has:

- Captured bats using harp traps and mist nets
- Radio-tracked bats for periods of up to two weeks
- Determined locations where bats are present using Automated Bat Monitoring units (ABMs)
- Monitored bat activity using ABMs
- Monitored bat behaviour using thermal imaging
- Used sophisticated modelling to analyse bat activity data
- Provided technical advice on the monitoring and management of bats

We have used these techniques, in association with Aecom and Ian Davidson-Watts, as part of our work on the Southern Links roading project, to gather information about long-tailed bat presence, as well as to locate sites used for roosting, foraging, and commuting.





Clockwise from top left: Kate setting up a harp trap for catching bats; Jamie radiotracking to locate a day roost; Kerry enjoying urban radiotracking; thermal imagery with bat shown in red circle; Kate radio-tracking at night.



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## EFFECTS OF LAND TRANSPORT ACTIVITIES ON NZ BATS

As the Nationally Critical long-tailed bat occurs patchily across New Zealand in a variety of landscapes, including modified habitats, they are the most likely of our two bat species to come into contact with existing roading infrastructure and new road development. The NZ Transport Agency identified a need to develop a framework for research into strategies for avoiding, reducing, or mitigating the adverse effects of roading projects on bats.

Des and Kerry led the development and publication of a NZ Transport Agency research report which identified the protection of adult female bats as key to survival of the species. This investigation confirmed, for the first time, that long-tailed bat activity declines with increases in overnight traffic volume. This report has already been used by various agencies and regulatory authorities as a guide, as it provides examples of potential consent conditions, vegetation removal protocols, prescriptions for monitoring, and mitigation options, and a review of the relative success of various approaches and techniques. Des and Kerry designed, analysed, and delivered the full field research project, wrote large portions of the report, and peer reviewed the full report. The following section from the report abstract describes the work:

"A framework guiding roading projects through the process of consents, ecological monitoring, and mitigation was developed and addresses ecological uncertainty around mitigation options, and describes improved bat monitoring".

#### The full report is available online:

https://www.nzta.govt.nz/assets/resources/research/reports/623/623-effects-of-land-transport-activities-on-NZs-endemicbat-populations.pdf

Wildlands led and managed the project, which was undertaken in collaboration with Landcare Research and Aecom planners.

### BATUSEOFBATBOXESINHAMILTON

An exciting finding from the long-tailed bat radiotracking that we carried out over summer was that bats are using the boxes that had been deployed by Project Echo, at the instigation of Darren Le Roux, in 2011.



Photograph: Waikato Regional Council.

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Bat boxes had been installed around Hamilton City parks, mostly in areas where long-tailed bats were known to be present, but none had been confirmed as actually being used by bats. Male and female bats were both found to be using boxes in January and March.

This is exciting news for Hamilton City bats!

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# Wildlands Bat Team

**Dr Kerry Borkin**, Senior Fauna Ecologist and Bat Specialist, Taupō. Kerry.Borkin@wildlands.co.nz

Kerry is Wildland's lead bat specialist, with 17 years of experience in ecological management and research. She is a nationally-recognised bat expert and has worked on most aspects of bat ecology and management. Her PhD investigated long-tailed bat (*Chalinolobus tuberculatus*) ecology in Kinleith Plantation Forest, focusing on the impact tree felling has on bat ecology. Kerry is a Level 5 (trainer) certified bat ecologist.





Dr Kate Richardson, Fauna Ecologist, Hamilton. Kate.Richardson@wildlands.co.nz

Kate specialises in threatened species management, with particular interests in reintroduction biology and community-led conservation. Kate has previously spent two seasons monitoring bats at Pureora for DOC, including harp trapping, banding, attaching transmitters, and radio tracking bats to roost sites, and more recently undertook similar work in Hamilton. Kate is a Level 4 certified bat ecologist, as well as Level 3 passerine bander and mistnetter, and has experience with ABM monitoring and thermal imaging.

Dr Jamie MacKay, Senior Ecologist, Auckland. Jamie.Mackay@wildlands.co.nz

Jamie's involvement in bat research has included the selection of appropriate microsites for Automatic Bat Monitoring Units (ABMs), collecting and analysing thermal imaging data, and scoping sites for thermal imaging, and radio-tracking bats to identify roosts and foraging areas. Jamie completed a PhD at the University of Auckland in 2011 and he has a strong, internationally-recognised, publication record in the field of pest mammal management in New Zealand.





### Sarah Budd, Senior Ecologist, Auckland. Sarah.Budd@wildlands.co.nz

Sarah's involvement in bat research has included the selection of appropriate microsites for Automatic Bat Monitoring Units (ABMs), scoping sites for thermal imaging, and collecting and analysing thermal imaging data. Sarah's ecological restoration experience includes the preparation of planting plans for diverse environments, including wetland, riparian, and terrestrial projects.

**Dr Des Smith,** Senior Fauna Ecologist & Christchurch Office Manager. <u>Des.Smith@wildlands.co.nz</u>

Des recently led a research project funded by NZ Transport Agency that investigated the impacts of roads on New Zealand's native bats; the project also developed a framework for monitoring and mitigating these impacts. Des has also modelled how weather and climate variables influence the probability of detecting bats during surveys. This work has already been used to guide monitoring in a number of projects. Des has 21 years experience in conservation and wildlife management.





Bruce MacKay, Ecologist, Hamilton, Bruce.MacKay@wildlands.co.nz

Bruce's involvement in bat research has included undertaking roost emergence watches, the selection of appropriate microsites for Automatic Bat Monitoring Units (ABMs) and field managing a large scale ABM monitoring project, as well as collecting and analysing thermal imaging data. Bruce has 25 years of experience in restoration ecology, ecological plans, project management, parks and reserves management, landscape design, and recreation planning.

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